Castilleja linariifolia

Castilleja

Publication of the Wyoming Native Plant Society

May 2015, Volume 34(2)

Posted at www.wynps.org

Ronald L. Hartman Excellence in Wyoming Botany Award

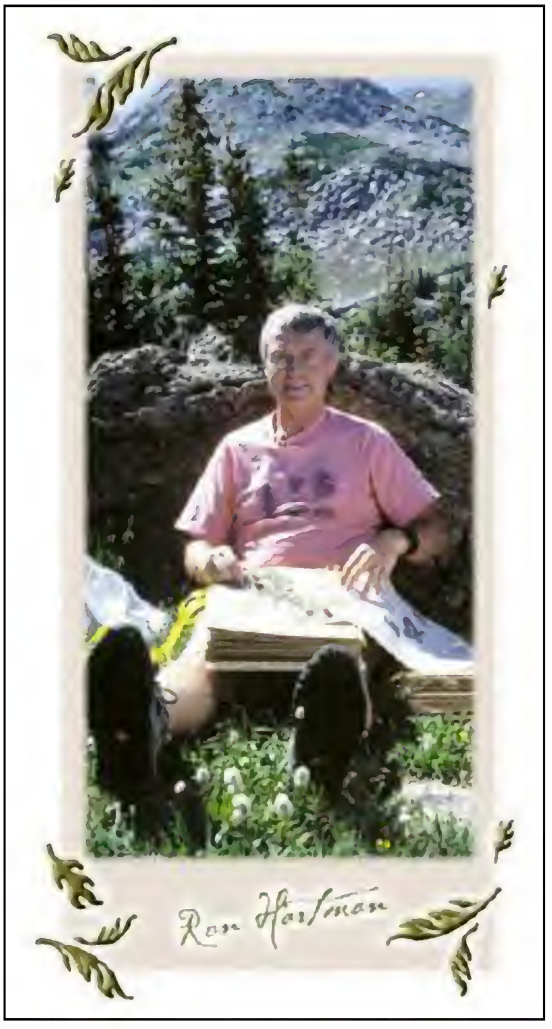
By Walter Fertig and Bonnie Heidel

The Wyoming Native Plant Society Board is proud to announce a new award, the **Ronald L. Hartman Excellence in Wyoming Botany Award**, present it to its first recipient – Ron Hartman – and dedicate it to him. The purpose of this award is to recognize outstanding contributions to the mission of the Wyoming Native Plant Society in promoting appreciation, conservation and understanding of Wyoming native plants and vegetation (see article, p. 3).

Ron Hartman is a world-renowned botanist and curator who has made a remarkable impact on our understanding of the Wyoming flora, collecting more plant specimens from Wyoming than any other person is likely to ever amass* and has built the Rocky Mountain Herbarium (RM) as the institutional framework for such understanding, from an important regional collection to one of international significance. Ron was a leader in getting specimens databased and as a result, RM has the highest number of specimens available on the internet of any herbarium in North America; all of this while situated in the state with the smallest population in the country. In 2002, Greg Brown, former Botany Dept. Chairman, praised RM by comparing it with sports: "If the University had a major sports team that ranked in the top 20 every year for the past 25 years, that would be **big** news" (*Castilleja* 23(1)). The record runs strong right thru the present under Hartman. Hartman has also named many new species from the west, chronicled the nationwide discovery of new species (1025 taxa from 1975-1994), and been a leader in the Flora of North America project.

Ron Hartman and his graduate students have worked beyond Wyoming boundaries in other states of the Rocky Mountains, and we have all benefited. Full press releases will be distributed as part of the 2015 Annual Meeting.

* There are 55,061 Wyoming specimens collected by Ron Hartman according to the Rocky Mountain Herbarium online database.



Above: Ron Hartman. From: Eisenhauer, D. 2002. Plant passion. *UWYO Magazine*, Nov. pp. 12-16.

In this issue:

Hartman Receives WYNPS Award..... 1
NEW AWARD: Recognizing Excellence in Wyoming Botany 3
Whitebark Pine Regeneration 3
Teton Reverie 5
Milkvetch and Mustards of the Tetons 6
Growing Native Plants: Rock Gardens..... 8

WYNPS News

2015 Scholarship Winner:

The 2015 WYNPS Markow Scholarship winner is Jiemen Guo (University of Wyoming, Botany Department), for her doctoral project examining the influence of water stress on the internal resistance to CO_2 diffusion in leaves of four dominant tree species in Wyoming. She was awarded $800. *Thanks to everyone who applied…and all who make it possible!*

2015 Annual Meeting: Two Sides of the Tetons

Register for fieldtrips on BOTH sides of the Tetons, Saturday dinner and program, a camping spot at Reunion Campground, and a grand gathering of Idaho and Wyoming Native Plant Society. Send in the form that was in the last issue making checks payable to "INPS Sawabi Chapter", or go online to register at: http://idahonativeplants.org.statewide-annual-meeting/. Registration is due no later than **15 June**. Open to the public.

Message from the President

It's that time of year! Signs of spring such as *Phlox*, *Cymopterus*, and *Lomatium* prompt me to trade in my winter pacs for hiking boots, dust off my plant books, and grab my hand lens for an outdoor adventure. And then it snows…which means moisture for more native plant viewing opportunities.

The 2015 WYNPS Board has been busy this winter, and is proud to announce a new Award for contributions to understanding and appreciation of native plants in Wyoming, named for its first recipient, the Ronald L. Hartman Excellence in Botany Award.

We have also awarded the Markow Scholarship to Jiemin Guo, a PhD student at the University of Wyoming's Department of Botany. Congratulations!

I would also like to give a shout out to our local Chapters of the Society. These chapters provide local programming that further the mission of encouraging "the appreciation and conservation of native plants and plant communities of Wyoming."

Teton Chapter is organizing our joint annual meeting of Wyoming and Idaho Native Plant Societies. The annual meeting is a great way to learn and meet people. In addition to a variety of hike opportunities on both sides of the Tetons, the speaker on Saturday evening will be Dennis Knight, Professor Emeritus at University of Wyoming. I know I can't wait! I hope you will join us for a fun and educational time ~Karen Clause, President

---

New Members: Please welcome the following new members to WYNPS: Rebecca Ashley, Laramie; Helen Coates, Laramie; Daniel Fairbanks, Sundance; Georgiana Foster, Sheridan; Carmen Kofoed, Winnemucca, NV; Susan Norman, Cheyenne; Eric Rossborough, Cody.

WYNPS Board – 2015

President: Karen Clause, Pinedale (kdclause@centurytel.net)
Vice-President: Brian Sebade, Sundance (bsebade@uwyo.edu)
Sec.-Treasurer: Ann Boelter, Laramie (boelter@uwyo.edu)
Board-at-large:
Walt Fertig, Phoenix, AZ ('14-'15) (waltola64@gmail.com)
Bob Giurgevich, Sheridan ('15-'16) (bobgiurgevich@live.com)

Wyoming Native Plant Society
P.O. Box 2449
Laramie, WY 82073

Treasurer's Report: Balance as of 8 April 2015: Scholarship = $1,048; General = = $5,716.84; Total = $6,764.84.

The Next Deadline: Please send articles, ideas and announcements for the October issue by 15 Sept.

Contributors to this Issue: Ann Boelter, Karen Clause, Kelley Coburn, Robert Dorn, Bonnie Heidel, Elizabeth Pansing.

Other contacts:
Editor: Bonnie Heidel (bheidel@uwyo.edu)
Webmaster: Brenna Marsicek (brennamarsicek@gmail.com)
Sublette Chapter: Julie Kraft, President (jewelyjoe@hotmail.com)
Teton Chapter: Amy Taylor, Treasurer; (tetonplants@gmail.com)
Bighorn Native Plant Society: Jean Daly, Treasurer (P.O. Box 21, Big Horn, WY 82833

New Wyoming Native Plant Society Award – Acclaim for Excellence

Purpose:

The WYNPS Excellence Award will recognize the contributions of professional and amateur botanists and Society members to the mission of the Wyoming Native Plant Society: *Promoting appreciation and conservation of Wyoming native plants and vegetation*. The award is limited to persons who have made exceptional contributions to botanical knowledge or to the Society. It is hereby dedicated to Ronald L. Hartman, first award recipient.

Nomination/vetting committee:

The committee will consist of three members approved by the current president, and will include at least one current Board member (traditionally the Vice President) and one past board member (traditionally the Past President). The Current President will delegate alternate membership to the committee in the event that the Vice President and/or Past President are unable to fulfill this commitment. The committee will meet as needed. The committee is responsible for vetting nominations from members, providing additional supporting documentation as needed, and for making nominations. At a minimum, the committee will convene once a year to discuss potential candidates for the award. Nominations approved by the committee will be forwarded to the Board, along with supporting documentation, for final decisions. At least one committee member will be available during the board meeting for consultation, if requested by the board. The committee is also responsible for providing a press release about the awardee.

Nomination process:

In addition to nominations from the committee, nominations will be solicited from WYNPS members and *Castilleja* readers via announcements in the October newsletter. To facilitate as many nominations as possible, this process will be simple, e.g., email or mail to a committee member and submission through the website. Nominations must include justification. Awards may be given to one or more individuals per year, but there may be years when there are no nominations or awards.

Selection of awardees should be made in the spring, in time to arrange for the recipient to attend the annual meeting, and the announcement made in the May newsletter.

Award:

Recipients will be honored at the annual meeting, and will receive a framed certificate. Press releases will be made available to *Castilleja* and other outlets as appropriate, and will have a permanent home on the website.

Approved by Board of Directors April 2015
Proposed by Bonnie Heidel, Walt Fertig, Dorothy Tuthill

Whitebark Pine Regeneration in Two Subalpine and Treeline Locations: Examining the Role of Microsite Type and Rodent Seed Theft

By Elizabeth Pansing

Elizabeth Pansing is recipient of the 2014 Markow Scholarship, completing Masters studies on whitepark pine regeneration on the Shoshone National Forest at University of Colorado – Denver.

Whitebark pine (*Pinus albicaulis* Engelm.), an upper subalpine and treeline conifer found throughout the western United States and Canada, stabilizes ecosystem function and fosters biodiversity. Populations have declined nearly range-wide because of an exotic fungal pathogen (*Cronartium ribicola*) that causes white pine blister rust, outbreaks of mountain pine beetle (*Dendroctonus ponderosae* Hopkins), and in some areas, successional replacement caused by fire suppression (Tomback et al. 2001).

Right: Whitebark pine seedling, by E. Pansing

Restoration efforts to mitigate these declines include planting nursery grown seedlings, which is both cost and labor intensive. Direct sowing, a method that involves sowing seeds rather than planting seedlings, shows promise in reducing cost and labor (DeMastus 2013). Obstacles to large-scale application of direct sowing exist, yet preliminary trials have been successful (Schwandt et al. 2007, DeMastus 2013). Remaining hurdles include assessing the impact of seed predation by small rodents, best microsite types, and the influence of elevation.

Table 1. Summary of the seed loss, germination, survival, and living seedlings by year*

	Tibbs Butte (%)	White Calf Mountain (%)	Study Areas Combined (%)
Seed loss	54 (n = 366)	54 (n = 351)	54 (n = 717)
2013 Germination	64 (n = 217)	42 (n = 212)	53 (n = 429)
2013-2014 Survival	63 (n = 139)	26 (n = 90)	48 (n = 229)
2014 Germination	36 (n = 217)	1 (n = 212)	21 (n = 429)
2014 Living (Includes 2013 and 2014 cohort)	36 (n = 366)	7 (n = 351)	31 (n = 717)

*Note that percentages were calculated based on different sample sizes depending upon the number of caches that progressed to the next stage of regeneration.

In 2012, we sowed seeds in subalpine forest and at treeline in two locations: Tibbs Butte, Shoshone National Forest, and White Calf Mountain, Glacier National Park. We cached seeds in the three most common microsite types used by whitebark pine's avian seed disperser, the Clark's nutcracker (*Nucifraga columbiana* Wilson): near rocks, trees, and no object. We monitored caches for two years to assess 1) seed predation by small seed eating mammals, 2) germination, and 3) first year survival.

For pilferage, germination, and survival rates, refer to Table 1. After one year, rodents removed one or more seeds from 54% of caches, representing a significant reduction in seeds available for the regeneration process. However, because both the density of small mammals, as determined by trapping, and the odds of pilferage were similar between study areas, the influence of pilferage on regeneration may vary with rodent density (Pansing 2014).

In 2014, seeds within 33 caches germinated asynchronously (i.e. one or more seeds within the same cache germinated in 2013 and 2014) on Tibbs Butte. The odds of both germination and survival were >2 times higher on Tibbs Butte than White Calf Mountain, suggesting that conditions on Tibbs Butte may be more suitable for whitebark pine regeneration.

The microsite types that support whitebark pine seed survival, germination, and seedling survival vary depending upon study area and elevation zone. At treeline on Tibbs Butte, odds of germination and survival were increased near rocks relative to trees and no object. However, odds of pilferage increased near rocks relative to no object, indicating discordance between microsite types suitable for seed survival and later stages of regeneration. In the subalpine zone, odds of seed theft were reduced near no object relative to rocks and trees, and no trends were apparent in germination and survival. These results suggest that no object increases the odds of regeneration success in the subalpine on Tibbs Butte. On White Calf Mountain, we detected no association between microsite type and regeneration success. Thus regional conditions may be more important for regeneration than microsite type.

Seedling recruitment rates of 10% resulting from direct sowing efforts could be deemed successful (DeMastus 2013). After two years, 31% of caches had living seedlings, indicating direct sowing is a viable means of whitebark pine restoration, despite pilferage rates in excess of 50%. However, variation in regional and elevational regeneration rates influence best microsite types. Therefore restoration guidelines should take into account regional and elevational differences, including small mammal densities, when recommending sowing practices.

References

DeMastus, C.R. 2013. Effective methods of regenerating whitebark pine (*Pinus albicaulis*) through direct seeding. M.S. thesis, Montana State University, Bozeman, Montana.

Pansing, E.R. 2014. The influence of cache site and rodent pilferage on whitebark pine seed germination in the northern and central Rocky Mountains. M.S. thesis, University of Colorado Denver, Denver, Colorado.

Schwandt, J.W., D.F. Tomback, R.E. Keane, W.W. McCaughey, and S.J. Kearns. 2007. First year results of a whitebark pine seed planting trial near Baker City, Or. *USDA Forest Service R6-NR-FHP-2007-01*

Tomback, D.F., Arno, S.F. and Keane, R.E. 2001. The compelling case for management intervention. In: Whitebark Pine Communities: Ecology and Restoration (ed. by D.F. Tomback, S.F. Arno and R.E. Keane), pp. 3–25. Island Press, Washington DC, USA.

TETON REVERIE

By Kelley Coburn

(Kelley Coburn is author of *The Trail to Table Mountain*. 2009. Black Timber Press, Victor, ID.)

Annie Dillard used her Pulitzer Prize narrative *Pilgrim at Tinker Creek* to promote one of the most promising aspirations ever committed to paper. She writes, "I would like to know grasses and sedges—and care. Then my least journey into the world would be a field trip, a series of happy recognitions."

Native Plant Societies based on both sides of the Teton Range will host an annual meeting July 10-13. A blue ribbon selection of field trips have been scheduled. I have little doubt the outings will be of a caliber that promotes both knowing and caring.

I hope to join a hike to either Table Mountain or the South Fork of Darby Canyon. The 6.5 mile route leading to Table Mountain's 11,106ft summit offers trailside views of well over 100 species. Those who opt for the Darby Canyon outing will tread upon the unique karst topography that was key to the establishment of the Jedediah Smith Wilderness Area.

The knowing portion of any Native Plant Society outing is a given. The ability of those who lead hikes to attach a binomial name to the slightest slip of greenness provides neophytes a chance to drink from the proverbial fire hose. The caring portion is more personal, and impossible to schedule.

There is a section of Table Mountain Trail that follows a ledge through a cliffy band of Flathead Sandstone. Numerous subalpine species have colonized the clefts encountered there. I once spent a good portion of a day photographing the gentians, shooting stars, and penstemons clustered in that vertical setting. I was leaning back, waiting for a passing cloud to soften the glare of mid-day sun, unaware that the sounds associated with foraging bumblebees had made a subliminal impression. An incongruent note rose up to the level of awareness. A measured bzzz, bzzz, BZZZT was being repeated all about me— my first exposure to sonication. I watched a small bumblebee grasp hold of a Shooting Star's fused anther, then dislodge chunks of pollen by rapid contractions of its flight muscles—the source of all the bzzzzing. The Shooting Star's quirky stamen arrangement, its swept-back petals suddenly made sense. Coevolution quietly slid from my mind's *textbook term* folder over to a *the sun rises in the east* folder. The cliffy section of trail that had long served as a pleasant passageway became a "take-off-thy-shoes" destination.

Shooting star, by Kelley Coburn

On a pair of occasions, my brother witnessed a wolverine near the saddle that separates Darby Canyon's Fossil Mountain from the massive bench of Madison Limestone penetrated by the Wind and Ice caves. I left home one morning hoping to do the same—spend time with the Teton Range's most elusive predator. The first couple of miles went well, but a long stint of work in a big box retail setting began to take its toll. The day turned warm. The energy required to reach a still distant destination began to fail.

I decided a nap might help. Deep, dream-free sleep came quickly, and persisted until a slight breeze came up. I opened my eyes, and with head still pillowed by a fleece jacket, witnessed a sight that lingers. A ground level botanical blizzard was in progress. Gossamer ribbons of Arnica seed drifted by. A shimmering mist of Fireweed spawn gave dimension to every passing zephyr. I was a boulder that caused a stream of silken seed to eddy.

I never made it to the saddle. I have yet to witness a foraging wolverine dig down into scree in search of mice and pika. But I would not trade such a sighting for the half hour spent watching embryonic plants dip and dive, hover like a kestrel.

Who's to say what will occur during the upcoming *Two Sides of the Tetons* gathering. We can aspire to a grand convergence of knowing and caring. Is there any better country to go out in search of them?

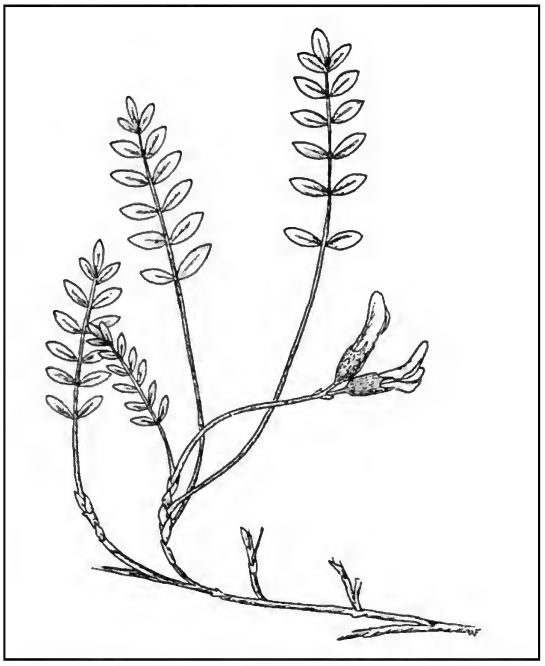
High and Mighty: Milkvetch and Mustards of the Tetons

By Bonnie Heidel

The towering Teton Range holds more than a few botanical surprises, including state and regional endemic plants. Three of the hikes offered in the 2015 annual meeting enter or approach the subalpine and alpine zones of these profiled plants.

Shultz's milkvetch (*Astragalus molybdenus* ssp. *shultziorum*, syn. *A. shultziorum*; Bean Family) is endemic to west-central Wyoming, adorning the Teton, Salt River and Wind River ranges. Its closest kin are far-flung relatives in central Colorado and northwestern Montana.

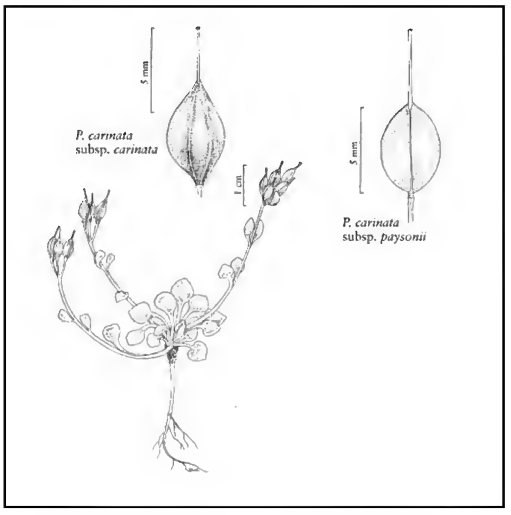
Arid regions in western North America are one of three global centers of distribution for the milkvetch genus (*Astragalus*). High in the Rocky Mountains are the three misfits (above), with a combination of morphological characteristics that ally them with Old World milkvetches while showing every chromosome and genetics characteristic that place them solidly in a New World clade of their own (Lavin and Marriott 1997). In the best of botanical sleuthing, a battery of analyses involving chromosome counts, cpDNA and morphological traits were run that elevated Shutz's milkvetch to full species.



Above: *Astragalus shultziorum* by Walter Fertig

The relation between the three milkvetch kin has also been treated at the variety level (Welsh 1998). No matter their relation, Shultz's milkvetch is a Wyoming species of concern and the only one of the three with predominantly white flowers, smallest seeds, and among the most reduced inflorescence and leaflets. It grows on rocky, calcareous soils from 8800-11,500 ft (Marriott 1990, Mancuso and Heidel 2008).

Compared to the milkvetches, closest kin in the bladderpods (Mustard Family) have converged on the Tetons. Keeled bladderpod (*Lesquerella carinata*; syn. *Physaria carinata* ssp. *carinata*) and Payson's bladderpod (*L. paysonii*; syn. *P. carinata* ssp. *paysonii*) are regional endemics of Idaho and Wyoming, the former more common in Idaho and the latter more common in Wyoming, with their distributions overlapping in the Tetons. They both occupy calcareous ridges and slopes, and were thought to occupy different elevation zones as present in the Teton Range. Reports of the "low elevation" Keeled bladderpod at high elevations were corroborated in surveys of the past decade (Mancuso and Heidel 2008).



Above: *Physaria carinata* ssp. *carinata* and *P. c.* ssp. *paysonii*, From: O'Kane, S. L. 2010. Physaria. Pages 616-665 in Flora of North America Editorial Committee, editor. Flora of North America North of Mexico. Vol. 7. Magnoliophyta: Salicaceae to Brassicaceae. Oxford University Press, New York, NY.

Taxonomic work coupled with revisionary treatments now align them as subspecies of *Physaria carinata* (O'Kane 2007; see also: *Castilleja* 29(3) and 31(3)) along with a Montana bladderpod. The two Teton taxa have similar elliptic fruit shape differing by presence/absence of the fruit keel. Both are state species of concern in Idaho and Wyoming while the latter is also a USFS Region 4 sensitive species. Some vouchers in the Tetons are only known from flowering

material, and as noted by O'Kane (2007): "Differences in fruit morphology become blurred and the three subspecies are often indistinguishable where their ranges meet near the intersection of Idaho, Montana, and Wyoming." …We won't let the perils and pitfalls of taxonomy keep us from pursuit of the mustard duo in our fieldtrip quests. The high and mighty are calling, even if we need to kneel to fathom them!

References

Lavin, M. and H. Marriott. 1997. *Astragalus molybdenus* s.l. (Leguminosae): Higher taxonomic relationships and identity of constituent species. Systematic Botany 22:199-217.

Mancuso, M. and B. Heidel. 2008. Wyoming plant species of concern on Caribou-Targhee National Forest: 2007 Survey Results. Prepared for Caribou-Targhee National Forest. Wyoming Natural Diversity Database, Laramie, WY.

Marriott, H. J. 1990. Survey and taxonomic study of *Astragalus shultziorum* (Shultz's milkvetch). Unpublished report prepared for the Bridger-Teton and Targhee National Forests by the Wyoming Natural Diversity Database, Laramie, WY.

O'Kane, S. L. 2010. *Physaria*. Pages 616-665 in Flora of North America Editorial Committee, editor. *Flora of North America North of Mexico*. Vol. 7. Magnoliophyta: Salicaceae to Brassicaceae. Oxford University Press, New York, NY.

Welsh, S.L. 1998. Astragalus (Leguminosae): Nomenclatural proposals and new taxa. Great Basin Naturalist 58(1):45-53.

POLLINATOR AWARENESS

Two-tailed swallowtail on purple coneflower, by Molly Clark

A new photo exhibit entitled "**Pollinators and Their Habitats**" by Molly Clark and Claire Leon (both of Sheridan, WY) is on display in the University of Wyoming Berry Biodiversity Conservation Center, inspiring increased awareness of and concern for native pollinators in Wyoming, The display combines stunning landscape photographs by WYNPS member, Claire Leon, and close up images of pollinators and plants by Molly Clark, along with identification tags and educational information. The images capture the diversity and beauty of a variety of pollinators, including bees, butterflies, hummingbirds and more.

The exhibit will be on display now through **National Pollinator Awareness Week**, held **June 15-22** nationwide and in Wyoming. Pollinator Week is an opportunity to bring pollinators to the public eye through educational and outreach events, which the UW Biodiversity Institute hosts each year.

Visitors to the exhibit are welcome Monday through Friday, 8:00 am – 5:00 pm at 10th and Lewis Street in Laramie. To stay in touch with Pollinator Week events, follow the Biodiversity Institute's Facebook page (www.facebook.com/biodiversityinstitute).

Announcing:
Special Issue in *Yellowstone Science* – Ecological Implications of Climate Change on the Greater Yellowstone Ecosystem. From the latest in snowpack trends to long-term monitoring plans, see the full issue (Vol. 23[1] of March 2015), posted electronically at: http://www.nps.gov/yell/planyourvisit/yellsciweb.htm

Announcing:
Heart Mountain BioBlitz, June 13-14, 2015
Cody, Wyoming

The 2015 BioBlitz hosted by Audubon Rockies, The Nature Conservancy and the UW Biodiversity Institute will be held on Saturday, June 13 and Sunday, June 14 at Heart Mountain Ranch Preserve outside of Cody, Wyoming. WYNPS isn't involved this year, but there will still be a diversity of plants, mammals, insects, and more on the property. To register or get more information go to: http://rockies.audubon.org/save-date-bioblitz-2015-june-13th-and-14thn .

Growing Native Plants
Part 16. Rock Gardens

By Robert Dorn

Wyoming has many native plants that are suitable for a rock garden. Some of the most desirable are those with a "cushion" form of growth. These plants often grow on wind swept ridges and rims so have many very short stems that are closely compact. The flowers often completely cover these cushion mats. Most of the plants are very drought tolerant. One disadvantage is that many of them bloom only in the spring. It is easy to balance this out with other low growing plants that bloom longer or later. The five examples that follow reflect the cushion growth form and later blooming. To see the plants in color, go to the Society website.

Astragalus sericoleucus, Silky Orophaca, grows to 2 inches high and often forms mats to 4 feet across. Variety *sericoleucus* from the eastern half of Wyoming forms loose mats while variety *aretioides* from the western half of Wyoming forms compact mats. The leaves are compound with three leaflets. The flowers are pink-purple to purple and barely surpass the leaves. They appear in May and June. The plants occur naturally on dry, often barren rocky areas in the basins and plains. They can be grown from seed that should be scarified before planting.

Astragalus sericoleucus, Goshen County

Calylophus lavandulifolius (syn. *Oenothera lavandulifolia*), Lavenderleaf Eveningprimrose, grows to 8 inches high and twice as wide. The leaves are narrow and to 1.5 inches long. The flowers are yellow aging to orange, pink, or lavender, each flower opening in late afternoon and fading the next day. They are solitary on the many short stems and to 1.5 inches across. They appear from May to August, a long blooming period. The plants occur naturally in clayey, calcareous, or sandy soils on the plains of southeast Wyoming, most often on calcareous outcrops. They are easy to grow from seed planted in summer. Adding limestone gravel is recommended. Seed is commercially available. The mature plants are difficult to transplant.

Calylophus lavandulifolius, Goshen County

Eriogonum caespitosum, Mat Wildbuckwheat, grows to 4 inches tall and forms mats to 16 inches across. The leaves are very small, to 0.5 inch long, crowded at the base of the plant, gray-green, and often persist over winter. The flowers are yellow sometimes tinged with rose, aging to rose, reddish-brown, or brownish-purple, and to .25 inch across. They are borne in small head-like clusters at the tips of leafless stems and appear from May to July. The plants occur naturally in open rocky areas of the lower mountains, foothills, and basins in the western half of Wyoming. They prefer full sun and moist to dry, well drained soils. They can be grown from seed lightly covered to

allow some light exposure and will germinate in cool conditions. Seed is commercially available.

Eriogonum caespitosum, Fremont County

Penstemon caespitosus, Mat Penstemon, grows to 5 inches high with creeping stems that form loose to dense mats to 3 feet across. The leaves are to 0.5 inch long and half as wide. The flowers are blue, or occasionally white or lavender, to .75 inch long, borne near the tips of stems, and often completely covering the plant. They appear from May to July. The plants occur naturally in southwest Wyoming amongst sagebrush, pinyon-juniper, or Gambel's oak in the foothills and basins. They prefer full sun to light shade and dry, sandy or gravelly or clayey soils and are alkaline tolerant. It can be grown from seed sown outdoors in the fall. It is also in the nursery trade.

****

To see these plants in full color, go to the Wyoming Native Plant Society homepage and open the newsletter: www.wynps.org.

Penstemon caespitosus, Lincoln County

Phlox andicola, Plains Phlox, grows to 4 inches tall and forms mats to 8 inches across or rarely wider. The leaves are short and very narrow, usually less than 1.25 inches long. The flowers are white or rarely lavender, to .75 inch across, often completely cover the mat, and appear from May to August, a long blooming period. The plants occur naturally in sandy places of the plains and basins. They prefer full sun and moist to dry, well drained sandy soil. They can be grown from seed surface sown outdoors in the fall. There are several more similar looking *Phlox* species in the state. Some of these prefer clay soils or limestone outcrops.

Phlox andicola, Goshen County

Reminder: If you haven't registered for the 2015 Annual Meeting - *Two Sides of the Tetons* – there's still time! Send in the form that was in the last issue making checks payable to "INPS Sawabi Chapter", or go online to register at: http://idahonativeplants.org.statewide-annual-meeting/. Registration is due no later than **15 June**.

Need a Plant Checklist for the Tetons?

For the most detailed **technical** checklist for Grand Teton National Park and environs, refer to Kesonie and Hartman (2011), posted online at the Registration site. Additional checklists and book sales will be available to 2015 annual meeting folks. Note: Kesonie was a 2007 WYNPS Scholarship winner!

Wyoming Native Plant Society is a non-profit organization established in 1981 to encourage the appreciation and conservation of the native plants and plant communities of Wyoming. The Society promotes education and research through its newsletter, field trips, annual student scholarship and small grants awards. Membership is open to individuals, families, or organizations. To join or renew, please return this form to:

Wyoming Native Plant Society
P.O. Box 2449
Laramie, WY 82073

Name: _____

Address: _____

_____

Email : _____

Check one: [ ] New member [ ] Renewing member

[ ] Renewing members, check here if this is an address change.

[ ] Check here if you prefer to receive the newsletter electronically

Membership

[ ] WYNPS annual membership: $10.00

[ ] WYNPS annual membership + scholarship support: $20.00 ($10.00 for membership and $10.00 for Scholarship fund)

[ ] WYNPS Lifetime membership: $300 ($150 for membership and $150 for Scholarship fund)

[ ] Sublette Chapter annual membership: $5.00

[ ] Teton Chapter annual membership: $5.00

Total enclosed:_____ THANK YOU!

Wyoming Native Plant Society
P.O. Box 2449
Laramie, WY 82073